

TASKAYEV, N.D.; KOROTKOV, L.S.

Semicoking of Kok-Yangak deposit coal with a solid heat-  
transfer medium. Trudy Inst.vod.khoz.i energ. AN Kir.SSR  
no.5:109-117 '59. (MIRA 13:5)  
(Coal--Carbonisation)

KOROTKOV, L.S., inzh.

Determining the heating time of a fuel particle in high-speed  
heat exchange. Teploenergetika 11 no.12:89-90 D '64  
(MIRA 18:2)

1. Institut energetiki i vodnogo khozyaystva AN Kirgizskoy  
SSR.

U 35004-05 EPA/ENT(1)/ENP(m)/ENG(v)/ENP(f)/T-2/ENP(bb)-2/F (k) Pd-1/Pe-5/Pa-4  
ACCESSION NR: AP5002225 WW S/0114/64/000/012/0015/0020

AUTHOR: Vinnik, I. D. (Engineer); Korotkov, M. A. (Engineer)

TITLE: Results of an aerodynamic investigation of crossover pipes in two-stage centrifugal compressors 23

SOURCE: Energomashinostroyeniye, no. 12, 1964, 15-20

TOPIC TAGS: compressor, centrifugal compressor, two stage compressor

ABSTRACT: The results of blowdown tests of six crossover-connection models with an axial uniform supply of air are reported. Each variant was designed on the basis of tests of the preceding variant; hence, the variants differ in the distribution of diffusivity among the constituent elements and in the shape, number, and position of the guiding vanes in the elbows. In addition, 50 full-size crossover pipes of the best variant were blowdown-tested to find out the effect of the accuracy of manufacture on their resistance. The best variant (II-5) was

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L 35054-65

ACCESSION NR: AP5002225

selected on the basis of the total-loss factor and pressure-conservation factor, and also the outlet velocity field. The sizes of all variants are tabulated. For limited-space cases, it is recommended that the crossover connections consist of three diffusers with two elbow pieces, variant II-5. Other recommendations are also given. Orig. art. has: 3 figures, 2 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PR

NO REF SOV: 003

OTHER: 000

Card 2/2

D 14438-66 EWT(m)/T IJP(c)  
ACC NR: AT6002500

SOURCE CODE: UR/3138/65/000/362/0001/0012

AUTHOR: Birger, N. G.; Borisov, V. S.; Bysheva, G. K.; Gol'din, L. L.; Korotkov, M. M.; Martusov, Ye. I.; Sidorenko, Z. S.; Tumanov, G. K.

ORG: none

19155  
TITLE: Measurement of proton momentum as a function of acceleration time on the synchrotron at the Institute of Theoretical and Experimental Physics

19, 55  
SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut teoreticheskoy i eksperimental'noy fiziki. Doklady, no. 362, 1965. Izmereniye zavisimosti impul'sa protonov sinkhrotrona ITEF ot vremeni uskoreniya, 1-12

TOPIC TAGS: proton beam, synchrotron, particle physics

ABSTRACT: A beam of particles emitted at an angle of 0.222 rad to the direction of incident proton was analyzed by an SP-12 magnet located 13 m from a polyethylene target. Positively charged particles deflected by this magnet at an angle of 0.262 rad reached the detector. The detector count rate was measured as a function of magnet current. The energy of elastically scattered protons was used as a basis for determining momentum. The measurements were made at four different time intervals

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KOROTKOV, M.M.

USSR/Nuclear Physics

C-2

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11053

Author : Bibergal', A.V., Korotkov, M.M.

Inst : Institute of Biological Physics, Academy of Sciences,  
USSR, Moscow

Title : New Type of Gamma Indicator

Orig Pub : Biofizika, 1956, 1, No 6, 564-567

Abstract : Description of two laboratory models of a simple, compact, and sensitive dosimeter, suitable for the measurement of the intensity of gamma or  $\beta$  radiation. The dosimeter comprises a combination of Geiger-Mueller counters with a string electrometer, and does not contain vacuum tubes. Since the electrometer operates in the static mode, and the counter requires not more than 1 -- 2 microamperes at full load, the instrument is practically currentless,

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USSR/Nuclear Physics

C-2

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 11053

which insures reliable and stable operation under the field conditions. The dosimeter is fed from two wafer batteries type GB-400-0.01. One of these batteries feeds the halogen counter CTC-1, while the other is connected to the electrometer plates. The counter current passes through an integrating network of a resistor and capacitor in parallel, which are simultaneously connected between the filament of the electrometer and the center point of the second battery. The voltage drop across the resistor as a result of the average counter current causes a displacement of the filament of the electrometer. The limits of the measured intensity of radiation can be varied by changing the RC network. The first model of the instrument has ranges 0.05 -- 5 and 3 -- 250 microröntgen per second, weighs 1.4 kg, and is formed in the shape of a "pistol" measuring 200 x 100 x 80 mm. The length of the moving scale, on which the filament is

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*Korotkov, M.M.*

BIBERGALL', A.V.; KOROTKOV, M.M.; ABRAKHOV, O.G.

Gamma irradiation apparatus GUBE-800 for radiobiological experiments  
[with summary in English]. Biofizika 3 no.1:118-122 '58. (MIRA 11:2)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.  
(GAMMA RAYS) (BIOLOGICAL APPARATUS AND SUPPLIES)



21(8)

SOV/89-7-3-7/29

AUTHORS:

Bibergal', A. V., Korotkov, M. M., Ratner, T. G.

TITLE:

Some Principles of Calculating and Using Strong Radiation Sources

PERIODICAL:

Atomnaya energiya, 1959, Vol 7, Nr 3, pp 244-251 (USSR)

ABSTRACT:

It is shown experimentally that in many cases approximated calculations are justified for the dose rate and the build-up factor of  $\gamma$ -systems, especially in the case of short distances between source and the irradiated object ( $\leq 100$  cm). The experiments are carried out with point, linear, and cylindrical  $\text{Co}^{60}$ - and  $\text{Cs}^{137}$ -sources of various thicknesses. The experimentally found results are graphically recorded and compared with the theoretically calculated curves. On the whole good agreement was found. The following measuring results are shown graphically: Build-up factor for water and the  $\gamma$ -radiation of point  $\text{Co}^{60}$ - and  $\text{Cs}^{137}$ -sources, dependence of the dose rate of a linear  $\text{Co}^{60}$ -source in water on the distance between the source and the place of irradiation, comparison of the dose rate of a linear source and the dose rate in the center of a

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Some Principles of Calculating and Using Strong Radiation Sources

cylindrical  $\text{Co}^{60}$ -source in water. Dependence of the dose rate of a linear source ( $\text{Co}^{60}$ ) in air on the distance between source and place of irradiation. Dependence of the dose rate within a cylindrical source ( $\text{Co}^{60}$ ) in the air on the source diameter. Dependence of the dose rate in air within a chamber for objects ( $d = 30 \text{ cm}$ ) on the diameter of the  $\text{Co}^{60}$ -source located in water. Dependence of the dose rate in water within a chamber for objects ( $d = 30 \text{ cm}$ ) of the dose rate of the  $\text{Co}^{60}$ -source in water. Dependence of the dose rate in water within a chamber for objects ( $d = 30 \text{ cm}$ ) on the diameter of the  $\text{Co}^{60}$ -source, which is in the air. From all measurements and comparisons between experimental and theoretical calculations the following conclusions may be drawn: for all practical cases of calculating  $\gamma$ -systems it is sufficient to take multiple scattering into account by means of the build-up factor, which may be represented by the sum of two exponential functions. If a uniform dose field is required in irradiation, the most rational method is to homogenize the dose field of extended sources by means of

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Some Principles of Calculating and Using Strong Radiation Sources

additional filters. These filters must, in each case, be calculated separately. If objects with a density  $\leq 1$  and a thickness  $\leq 40$  cm are to be irradiated, the use of a  $\text{Cs}^{137}$ -source is more productive than that of a  $\text{Co}^{60}$ -source. There are 10 figures and 13 references, 8 of which are Soviet.

SUBMITTED: March 4, 1959

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KOROTKOV, M. M.

~~STARODUBTSEV, G. D.~~

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PHASE I BOOK EXPLOITATION SOV/5410

Tashkentskaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii, Tashkent, 1959.

Trudy (Transactions of the Tashkent Conference on the Peaceful Uses of Atomic Energy) v. 2. Tashkent, Izd-vo AN UzSSR, 1960. 9 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk Uzbekskoy SSR.

Responsible Ed.: S. V. Starodubtsev, Academician, Academy of Sciences Uzbek SSR. Editorial Board: A. A. Abdullayev, Candidate of Physics and Mathematics; D. N. Abdurazulov, Doctor of Medical Sciences; U. A. Arifov, Academician, Academy of Sciences Uzbek SSR; A. A. Borodulina, Candidate of Biological Sciences; V. N. Ivashev; G. S. Ikramova; A. Ye. Kiv; Ye. N. Lobanov, Candidate of Physics and Mathematics; A. I. Nikolayev, Candidate of Medical Sciences; D. Nishanov, Candidate of Chemical Sciences; A. S. Sadykov, Corresponding Member, Academy of Sciences USSR, Academician, Academy of Sciences Uzbek SSR; Yu. N. Talanin,

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Transactions of the Tashkent (Cont.)

SOV/5410

Candidate of Physics and Mathematics; Ya. Kh. Turakulov, Doctor of Biological Sciences. Ed.: R. I. Khamidov; Tech. Ed.: A. G. Babakhanova.

PURPOSE : The publication is intended for scientific workers and specialists employed in enterprises where radioactive isotopes and nuclear radiation are used for research in chemical, geological, and technological fields.

COVERAGE: This collection of 133 articles represents the second volume of the Transactions of the Tashkent Conference on the Peaceful Uses of Atomic Energy. The individual articles deal with a wide range of problems in the field of nuclear radiation, including: production and chemical analysis of radioactive isotopes; investigation of the kinetics of chemical reactions by means of isotopes; application of spectral analysis for the manufacturing of radioactive preparations; radioactive methods for determining the content of elements in the rocks; and an analysis of methods for obtaining pure substances. Certain

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Transactions of the Tashkent (Cont.)

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instruments used, such as automatic regulators, flowmeters, level gauges, and high-sensitivity gamma-relays, are described. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

RADIOACTIVE ISOTOPES AND NUCLEAR RADIATION  
IN ENGINEERING AND GEOLOGY

Lobanov, Ye. M. [Institut yadernoy fiziki UzSSR - Institute of Nuclear Physics AS UzSSR]. Application of Radioactive Isotopes and Nuclear Radiation in Uzbekistan

7

Taksar, I. M., and V. A. Yanushkovskiy [Institut fiziki AN Latv SSR - Institute of Physics AS Latvian SSR]. Problems of the Typification of Automatic-Control Apparatus Based on the Use of Radioactive Isotopes

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- Transactions of the Tashkent (Cont.) SOV/5410
- Leshchinskiy, N. I., G. N. Lokhanin, and A. S. Shtan' [Glavatom - Main Administration for the Utilization of Atomic Energy]. Organization of Laboratories for Experiments Using Radioactive Substances 132
- Bibergal', A. V., N. I. Leshchinskiy, M. M. Korotkov, and O. G. Arakelov. Development of a Transportable Gamma-Plant for Seed Irradiation Before Sowing 148
- Artemeladze, I. D., A. A. Bibergal', and T. V. Tsetskhladze [Institut fiziki AN GruzSSR - Institute of Physics AS GruzSSR] Experimental Semi-Industrial Gamma-Plant for Radiation Processing of Agricultural Products in Georgia 155
- Bibergal', A. V., N. I. Leshchinskiy, U. Ya. Margulis, and V. G. Khrushchev. [Ministerstvo zdorovookhraneniya - Ministry of Health USSR]. Some Problems of Design and Construction of High-Capacity Gamma-Plants 164

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BIBERGAL', A.V.; YEMEL'YANOV, K.N.; KOROTKOV, M.M.; LESHCHINSKIY, N.I.;  
RATNER, T.G.

Transportable  $\gamma$ -ray apparatus GUPOS - Cs<sup>137</sup> -800 for presowing  
irradiation of seeds. Atom. energ. 12 no.2:159-160 F '62.  
(MIRA 15:1)  
(Radiation sterilization)



KOROTKOV, M.M., inzh.; LITOV, V.A., inzh.

Sport motorboat made of duraluminum. Sudostroenie 27 no.12:38-41  
D '61. (MIRA 15:1)  
(Motorboats) (Duralumin)

KOROTKOV, M.T.

Industrial adaptation of the production of a bivalent serum for paratyphoid and colibacillosis in calves. Trudy Gos.nauch.-kont.inst. vet.prep. 4:314-316 '53. (MIRA 7:10)

1. Arnavirskaya biofabrika.  
(Serum) (Bacillus coli) (Salmonella parathyphi)

KOROTKOV, M. T.

AID P - 693

Subject : USSR/Engineering

Card 1/1 Pub. 29 - 4/18

Author : Korotkov, M. T., Eng.

Title : Improvement of a high pressure boiler

Periodical : Energetik, 8, 11-13, Ag 1954

Abstract : A 64-atm, 485°C, single drum boiler with 50 ton/hr capacity, in operation at a heat and electric power plant, had certain deficiencies. The author describes the measures applied to remove these deficiencies. 3 diagrams.

Institution : None

Submitted : No date

KOROTKOV, M. T.

USSR/Medicine - Veterinary

FD-1268

Card 1/1 : Pub. 137-5/17

Author : \*Korotkov, M. T.

Title : Biologicals plant in Armavir

Periodical : Veterinariya, 10, 30-34, Oct 1954

Abstract : The Armavir plant has facilities to manufacture 25 thousand liters of biologicals per year -- enough to protect and treat 20 million animals. Vaccines against the following diseases are produced by the plant: dysentery in lamb, paratyphoid in calves, Gangraena emphysematosa, and plague in swine. Bivalent antitoxic serum and antibacterial serum against paratyphoid and colibacillosis in calves are also produced. Methods are the same as those used by all other plants in the USSR: these methods are prescribed by the State Control Institute for Veterinary Preparations. Biologicals manufactured by the Armavir plant are shipped to various departments of the All-Union Trust for Veterinary Supplies. Illustrations.

Institution : Armavir Biologicals Plant (\*Director)

Submitted :

KOROTKOV, P. V.

Mining Engineering

Protection of vertical shafts in mines working steeply inclined seams, [Trudy]  
VNEMI, 22, 1950.

9. Monthly List of Russian Accessions, Library of Congress, October 195<sup>2</sup><sub>3</sub>, Uncl.

KOROTKOV, M.Y., kandidat tekhnicheskikh nauk; OGLOBLIN, D.N.,  
otvetstvennyi redaktor; SLAVOROSOV, A.Kh., redaktor;  
PROZOROVSKAYA, V.L., tekhnicheskiiy redaktor.

[Coal mining below building structures in the Donets Basin]  
Vyemka uгля pod soorusheniyami v Donbasse. Moskva, Ugle-  
tekhnizdat, 1953. 218 p. [Microfilm] (MLRA 7:12)  
(Donets Basin--Coal mines and mining)

KOROTKOV, M. V.

Engl Abstracts  
Vol. 77, No. 2  
Feb. 1954  
Material Solid  
Index: Mining

774. STUDY OF DEVEIMENT OF ROCKS AND EARTH'S SURFACE, AND PROTECTION  
OF STRUCTURES FROM INFLUENCE OF MINE WORKINGS. Korotkov, M.V. (Ugol  
(Coal), Sept. 1953, 15-18). Improvements are urged in Soviet safety rules,  
collection of data, design of structures and standardization of terminology.  
(L).

15-57-3-3763  
Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 3,  
pp 183-184 (USSR)

AUTHOR: Korotkov, M. V.

TITLE: The Association Between Deformation of the Ground  
Surface (Soil) and Deformation of Uppercut Structures  
/Svyaz' mezhdu deformatsiyami zemnoy poverkhnosti  
(grunta) i deformatsiyami podrabatyvayemykh sooruzheniy/

PERIODICAL: Issledovaniya po vopr. marksheyd. dela, Nr 30, 1956,  
pp 49-79

ABSTRACT: In the majority of cases, cutting under structures  
produces cantilevers, unsupported foundations, redis-  
tribution of load on the sole of the foundation, and  
cutting of the foundation into the ground for the depth  
of 10 to 30 mm. This cutting of the foundation into  
the ground facilitates smoothing of the soil profile  
and decreases stresses in the structure. The measured  
values of deformation of the ground and of the founda-  
tions depend on the distances between datum points and

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*PEREKHOV M.V.*  
KOLBENKOV, S.P., kand. tekhn. nauk; PETUKHOV, I.A.; MITICHKINA, N.I.;  
SULIDI, L.S.; KOROTKOV, M.V., kand. tekhn. nauk, otvetstvennyy  
red.; AVERSHIN, S.G., prof., red.; SLAVOROSOV, A.Kh., red. izd-  
va; ALADOVA, Ye.I., tekhn. red.

[Shifting of rock and of the earth's surface in the chief coal  
basins of the U.S.S.R.] Sdvizhenie gornyykh porod i zemnoi  
poverkhnosti v glavneishikh ugol'nykh basseynakh SSSR. Moskva,  
Ugletekhnizdat, 1958, 249 p. (MIRA 11:10)

1. Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy marksheye-  
derskiy institut.

(Coal geology) (Earth movements)

AUTHOR: Korotkov, M. V., Candidate of  
Technical Sciences SOV/154-58-4-10/18

TITLE: Records of the Subsidence of the Surface and of Buildings  
Due to Mine Working (Nablyudeniya za sdvizheniyem zemnoy  
poverkhnosti i sooruzheniy pod vliyaniyem gornykh razrabotok)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aero-  
fotos"yemka, 1958, Nr 4, pp 93 - 96 (USSR)

ABSTRACT: In the USSR in mining districts subsidences and ground  
movements were found attaining 3-4 m and more, as well  
as damage to buildings and structures. From 1929 to  
1936 systematic observations were carried out in  
laboratories and, by special equipment, in the mines.  
The association mentioned below carried out very  
farreaching investigations. In coal, and metal mines  
the differential method developed by N.G.Kell',  
Corresponding Member, Academy of Sciences, USSR, was  
used for observing the horizontal ground movement.  
This method features a measurement of angles instead  
of distances. Thus in the Ural the displacement of the

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Records of the Subsidence of the Surface and of  
Buildings Due to Mine Working

SOV/154-58-4-10/18

bench mark 336 was determined from four stations of a fifth grade mining survey. A generalization of the experience pooled for many years lead to the compilation of the "Regulations for the Protection of Buildings and Natural Objects Against the Destructive Influence of Underground Mining". The regularities which were found to exist were used as a basis for the prediction of subsidences which had to be expected, of horizontal ground movements and deformations. Errors in subsidence calculations reached 10-15%, in deformation determinations they were 20-40%. The "Provisional Technical Specifications for Designing and Erecting Buildings and Structures on Coal Mining Fields" were drafted and have already been introduced into practical use. These investigations were carried out in the caving above the coal seam below the town of Stalino, and on the track of the canal Severnyy Donetsk-Donbass etc. There are 1 figure and 1 table.

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Records of the Subsidence of the Surface and of  
Buildings Due to Mine Working

SOV/154-58-4-10/18

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy  
institut (All-Union Scientific Research Institute of  
Mine Surveying)

Card 3/3

KUZNETSOV, S.T., kand.tekhn.nauk; DAVYDOVICH, I.L., kand.tekhn.nauk;  
KOROTKOV, M.V., kand.tekhn.nauk; KOLBENKOV, S.P., kand.tekhn.nauk

"Efficient development and rock-hole mining methods," V.P.  
Prokof'ev, K.P. Zaika. Reviewed by S.T. Kuznetsov and others.  
Ugol' 36 no.11:60-61 N '61. (MIRA 14:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut.  
(Coal mines and mining)  
(Prokof'ev, V.P.) (Zaika, K.P.)

KOROTKOV, M.V., kand.tekhn.nauk

Protecting structures from harmful effect of mining operations in  
British mines. [Trudy] VNIMI no.40:182-211 '61. (MIRA 14:12)  
(Great Britain--Coal mines and mining--Safety measures)

KOLBENKOV, S.P.; MEDYANTSEV, A.N.; IOFIS, M.A.; KOROTKOV, M.V.;  
MULLER, R.A.; YUSHIN, A.I.; MELAMUT, L.S.; KARGIN, G.P.;  
GERTNER, P.F.; ZARETSKIY, K.S.; CHECHKOV, L.V., red. izd-  
va; MAKSIMOVA, V.V., tekhn. red.

[Designing, constructing, and protecting buildings and  
structures on foundations undercut by mining] Proektiro-  
vanie, stroitel'stvo i okhrana zdaniy i sooruzheniy na pod-  
rabatyvaemykh territoriyakh. Moskva, Gosgortekhzdat,  
1963. 451 p. (MIRA 16:8)

(Earth movements and building)

KOROTKOV, M.V., kand.tekhn.nauk; MULLER, R.A., kand. tekhn. nauk;  
KRUTENKO, N.I., inzh [deceased]; MADLEVSKIY, V.V., inzh.

Effectiveness of various types of experimental house foundations undercut by mining. [Trudy]VNIMI no.50:233-235 '63.  
(MIRA 17:10)



88313

S/110/60/000/006/003/007  
E073/E455

1 1000 (2428)

AUTHOR: Korotkov, M. Ya., Engineer

TITLE: Induction Furnaces of Industrial Frequency for Heating  
Aluminium

PERIODICAL: Vestnik elektropromyshlennosti, 1960, No.6, pp.21-24

TEXT: In induction furnaces the useful output, in kW/m<sup>2</sup>, can be expressed as

$$P = 5N_1^2 \frac{\rho_2}{a_2} \quad (2)$$

where  $N_1$  = specific ampere-turns of the inductor;  $\rho_2$  = specific resistance of the material of the ingot to be heated, in ohm·mm<sup>2</sup>/m;  $a_2$  = depth of penetration of the current, in cm. By increasing the potential of the magnetic field,  $P$  can be increased to several hundreds of kW/m<sup>2</sup> so that the minimum heating time is reduced to a few minutes. Thus the length of the inductor can be reduced to three to four times the length of the ingot. The heat loss to the surroundings does not exceed 2 to 3%, so that the efficiency of the induction furnaces will remain unchanged

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S/110/60/000/006/003/~~CM~~  
E073/E455

### Induction Furnaces of Industrial Frequency for Heating Aluminium

(at 62 to 65%) irrespective of the loading of the furnace. General data are given on the design of induction furnaces, with a photograph of a three-phase induction holding furnace of 600 kW for ingots of 350 mm diameter. The inductor consists of six coils in two three-phase groups, which can be star or delta connected. There are tapings on the outer layer of each coil for the purpose of controlling the power of the furnace. The inductor is fitted with a magnetic circuit for the purpose of obtaining a more uniform heating in the longitudinal direction and reducing by 7 to 8% the necessary rating of the condenser bank. The coils are wound with copper tubing in three layers, with individual water-cooling of each layer. The coils have high-temperature insulation and are impregnated with ~~38~~-36 (EF-36) varnish. The water temperature and pressure are relay-controlled. Recommendations are given on choosing the dimensions of an induction furnace and on controlling the heating speed and the heating temperature. It is stated in the

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S/110/60/000/006/003/007  
E073/E455

**Induction Furnaces of Industrial Frequency for Heating Aluminium**

conclusions that by introducing 50 cps induction-heating of aluminium ingots the productivity of the presses could be increased on the average by 30 to 35%. The installed furnace capacity can be reduced by 10 to 20% and the consumption of electricity reduced by 1.5 to 2.5 times compared to electrical resistance furnaces. There are 2 figures and 2 tables.

**SUBMITTED: September 28, 1959**

Card 3/3

KOROTKOV, N.

Problems are solved jointly. Okhr.truda i sots.strakh.  
no.10:23-25 0 '59. (MIRA 13:2)

1. Doverennyy vrach Voronezhskogo oblssovprofa.  
(Voronezh—Public health)

KOFOTKOV, N.

Removing wild oats on separators. Mak.-elev. prom. 25 no.11:14  
N '59. (MIRA 13:3)

1. Proizvodstvenno-tekhnicheskoye upravleniye Ministerstva khlebo-  
produktov UssSR.  
(Grain--Cleaning) (Wild oats)

KOROTKOV, N., inzh.

In the Tashkent Mixed Feed Plant. Mik.-elev.prom. 28 no.3:12-13  
Mr '62. (MIRA 15:4)

1. Tashkentskiy mel'kombinat No.1.  
(Tashkent--Feed mills)

KOROTKOV, N., inzh.

Machine for packing flour and groats packages in sacks. Muk.-elev.  
prom. 28 no.8:26 Ag '62. (MIRA 17:2)

1. Tashkentskiy mel'nichnyy kombinat No.1.

MOYKO, V.; ZHURBENKOV, V.; KOROTKOV, N.; SAMETS, E.; P. BOLINA, V.;  
BERESHOV, V.A., kand. veterinar'nykh nauk, nauchnyy soodestitel'

Use of protein hydrolysates in fur farming. Sbor. nauch. rab.  
sib. Petrozav. gos. un. no.6:190-194 1962.

(MIRA 17:11)

1. Kafedra zootekhnii Petrozavodskogo gosudarstvennogo  
universiteta.



ACC NR: AP7005658

(A, N)

SOURCE CODE: UR/0413/67/000/002/0115/0115

INVENTOR: Zbar, N. R.; Baburina, G. Ya.; Korotkov, N. P.; Kurdyumova, G. V.;  
Ebel', I. I.

ORG: None

TITLE: A memory unit. Class 42, No. 190661 [announced by the Design Office of the Main Administration for Signalling and Communications, Ministry of Means of Communication SSSR (Konstruktorskoye byuro Glavnogo upravleniya signalizatsii i svyazi Ministerstva putey soobshcheniya SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 115

TOPIC TAGS: computer memory, thyatron, binary code

ABSTRACT: This Author's Certificate introduces a memory unit of the static type which uses metallized paper for recording binary coded information together with attachments for changing the paper by winding from a feed drum to a take-up drum. The recording process also involves the use of indicator and control units based on cold-cathode thyatrons and commutation elements. The design provides for simplification of the units for monitoring and signalling of a completed recording without erasing previously recorded data with repeated use. An elastic pad holds a contact plate against the metallized paper. Holes cut in this plate form informatic storage cells. Within

Card 1/2

UDC: 681.142.07

SUB CODE: 09/ SUB

Card 2/2

APPROVED FOR RELEASE: 06/14/2000

USSR / General Division, Methods and Techniques of Research A-6

Abs Jour: Ref Zhur-Biologiya, No 5, 1958, 18913

Author : Bibergal' A. V., Korotkov N. M.

Inst : -

Title : A New Type Gamma Indicator

Orig Pub: Biofizika, 1956, 1, No 6, 564-567

Abstract: The registering portable apparatus of control and protection, of the indicator type, registering  $\gamma$  and  $\beta$  rays, is a combination of a halogen meter STS-1, working in a Geiger regime, with a stringed electrometer. The electrometer is connected according to the scheme of a constant variation and measures the decrease in voltage on the resistance of the charge of the meter from the center discharge of current. The meter works in the end of the Geiger field. The meter is sensitive to small magnitudes of doses (down to the registration of contam-

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PLUZHNIK, I.N., Mayor med. sluzhby.; KOROTKOV, N.T., starshiy leytenant med. sluzh-  
by.

Case of lung injury due to pressure and burns of the mucosa of the eyes  
and upper respiratory tract. Voen.-med.shur. no.11:79-80 N '56.

(RESPIRATORY ORGANS—DISEASES)

(MIRA 12:1)

(BURNS AND SCALDS)

CHALOV, N.V.; LESHCHUK, A.Ye.; KOROTKOV, N.V.; GORYACHIKH, Ye.F.; AMAN, A.Kh.;  
PAAKIKIVI, L.B.; ALEKSANDROVA, O.A.

Hydrolysis of cellulose lignin by a 44-45% hydrochloric acid solution  
in a diffusion battery. Zhur. prikl. khim. 34 no. 12:2737-2745 D '61.  
(MIRA 15:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut gidroliznoy i  
sul'fitno-spirovoy promyshlennosti.  
(Lignin) (Hydrolysis)

KOROTKOV, O.N., inzh.

Ditching machine. Transp. stroi. 8 no.2:28-29 F '58.

(MIRA 11:2)

(Excavating machinery)

KOROTKOV, P.A.

Automatic line for making molds for faience plates. Trudy LTL no.50:117-  
124 '59. (MIRA 14:3)

(Pottery)

KOROTKOV, P.A.

Calculating balance dampers for given weighing conditions. Trudy LTI  
no.50:93-104 '59.

(MIRA 14:3)

(Balance--Vibration)

SOV/97-58-9-3/13

AUTHORS: Fridkin, A.Ya., ~~Korotkov, P.A.~~, Belobrov, I.K. and Klevtsov, V.A., Engineers

TITLE: Pre-cast Pre-stressed Reinforced Concrete Beams Serving as Support to Bridge Cranes (Sbornyye zhelezobetonnyye predvaritel'no napryazhennyye podkranovyye balki)

PERIODICAL: Beton i Zhelezobeton, 1958, nr 9, pp 329 - 336 (USSR)

ABSTRACT: The most effective type of beam for supporting bridge cranes, as far as economy of concrete and steel are concerned, is the one that is continuously reinforced. This continuous reinforcing method requires special machinery and equipment. Consumption of concrete and steel in beams reinforced with rods is much higher than those with continuous or batch reinforcement. Beams with rod reinforcement are economical only when heavy cranes are used and reinforcement type 3OKhG2S. It is not so economical to use rod reinforcement in beams of 12 m span when compared with similar beams reinforced with batch reinforcement. Leningrad Promstroyproyekt, in conjunction with NIIZhB, is working on a project for pre-stressed reinforced concrete beams 6 and 12 m long, designed to carry cranes with capacity of up to 50 tons.

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SOV/97-58-9-3/13

Pre-cast Pre-stressed Reinforced Concrete Beams Serving as  
Support to Bridge Cranes

Figure 1 illustrates beams with rod reinforcement of standard profile and steel Mark 25G2S. The reinforcement is tensioned to 2.5% of its length, not less than 4 700 kg/cm<sup>2</sup>; limit of elasticity is 5 000 kg/cm<sup>2</sup>. Table 1 shows typical cross-sections of 6 and 12 m rod reinforced beams and gives respective technical data. Table 2 shows typical cross-sections of 6 and 12 m batch reinforced beams and gives respective technical data. The NIIZhB carried out tests with both rod and batch reinforcement of these beams. In the case of beams with batch reinforcement, special anchoring washers were used which were not welded to rods and it was necessary to ascertain the anchoring properties of the reinforcement in the concrete when these washers were omitted. Tests were carried out by Engineer I.K. Belobrov and Candidates of Technical Sciences S.A. Dmitriyev and N.M. Mulin in a laboratory that specialises in the theory of reinforced concrete and reinforcement (Head: Professor A.A. Gvozdev). Figure 3 illustrates horizontal cracks at the end of the beam. The effect of these cracks on the collapse of the end of the beam under testing

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SOV/97-58-9-3/13

Pre-cast Pre-stressed Reinforced Concrete Beams Serving as  
Support to Bridge Cranes

conditions is described. To prevent the formation of the horizontal cracks at the end of the beams, part of the cross reinforcement at the end was pre-stressed in order to compress the concrete in this part of the beam. Tensioning was 1/6th of the value used for longitudinal reinforcement. No horizontal cracks appeared after this (Figure 4). Illustration of the method and the machines used for the investigation of pre-stressing of beams 6 and 12 m long is given in Figure 5. Figure 6: graph of deflections of crane-carrying beams (PN6-1, PN6-2 and PN6-3) with pre-stressed reinforcement and beam P06-1 reinforced without pre-stressing. It shows that pre-stressed reinforced beams are twice as strong and crack formations are only one-fourth. The casting of beams 12 m long was made possible by the construction of a machine DN-7. Figure 7 shows the continuous reinforcement of the beam. The concrete used has strength of  $400 \text{ kg/cm}^2$  and the reinforcement is of high-tensile wires of 3 - 4 mm diameter. Figure 8 shows the method of winding continuous reinforcement and casting two beams. A method

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SOV/97-58-9-3/13  
 Pre-cast Pre-stressed Reinforced Concrete Beams Serving as  
 Support to Bridge Cranes

of this continuous reinforcing of crane-carrying beams was developed by Candidate of Technical Sciences G.I. Berdichevskiy, and testing of beams was carried out by Engineer V.A. Klevtsov in the laboratory of NIIZhB. Figure 10 gives deformation graph of concrete units of the beam in the middle of its span. Tests show that the strength of the beam is considerable; its deflection was 3.2 - 3.6 mm which is 1/1 800 to 1/1 600 of the span. Table 3 gives values of beams carrying cranes of 30-ton capacity. These values show that the most economical type of reinforcement is the continuous reinforcement of these beams. The Leningrad Promstroyproyekt designed open-lattice type of crane-carrying beam from pre-stressed reinforced concrete (Figure 11). There are 11 figures and 3 tables.

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SOV/97-59-1-3/18

AUTHORS: Krotovskiy, S.S., Candidate of Technical Sciences;  
Khar'kin, A.M., Engineer; Zadvin, M.V., Engineer and  
Korotkov, P.A., Engineer.

TITLE: Construction of Pre-stressed Reinforced Concrete Elements  
of a Ramp Serving a Blast Furnace (Opyt izgotovleniya  
predvaritel'no napryazhennykh zhelezobetonnykh elementov  
bunkernoy estakady domennoy pechi).

PERIODICAL: Beton i Zhelezobeton, 1959, Nr.1, pp.11-15 (USSR)

ABSTRACT: Various basic constructional elements of pre-tensioned  
reinforced concrete ramps serving blast furnaces (i.e. beams,  
frames carrying ore bunkers, railtrucks, and slabs) are  
described. The authors of this project are engineers  
Yu.I. Ukhina and A.Ya. Fridkin. Fig.1 shows cross section  
of the ramp supported at 4570 mm centres. The main  
frame is of 10.38 m span carrying ore bunkers and two  
railway trucks with a total loading of 500 t (see Fig.2).  
The cross-section of the frame is 440 x 2,300 mm, made  
from concrete mark 400 reinforced with 26 batches of high

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SOV/97-59-1-3/18

Construction of Pre-stressed Reinforced Concrete Elements of a Ramp  
Serving a Blast Furnace.

tensile reinforcement each containing 18 5 mm wires resisting temporary stresses up to 17,000 kg/cm<sup>2</sup>. Six batches of reinforcement are placed in the top zone and 20 batches in the bottom zone of the beam. Fig.3 illustrates beams carrying railway trucks. Technical advice during the erection of the above construction was given by the ASIA SSSR and Lenpromstroyproyekt. The concreting was carried out on open yards using two tower cranes of 3 t capacity and a bridge crane of 30 t capacity. Curved channels for batch reinforcement were formed by means of rubber tubes of 51 mm diameter. The straight channels were formed by means of steel tubes which during concreting were rotated round their axes every 20 minutes and were pulled out after 2 hours. Fig.4 illustrates the formwork and the reinforcement of the frame. In 1 m<sup>3</sup> of concrete the following ingredients were used: 570 kg of cement mark 500; 640 kg of sand; 1,220 kg of coarse aggregate up to 25 mm in size, and 200 l. of water. The water/cement ratio was 0.35.

Card 2/3 The concrete was delivered in tipping bunkers and consolidated

SOV/97-59-1-3/18

Construction of Pre-stressed Reinforced Concrete Elements of a Ramp  
Serving a Blast Furnace.

by vibrators I-21, I-50 and I-80. The curing lasted 36 hours at a temperature of  $80^{\circ}\text{C}$ . After that the strength of the concrete was great enough to tension the reinforcement, i.e.  $360 \text{ kg/cm}^2$ . Fig.5 illustrates the testing of anchoring by jack. A detailed description of tensioning and anchoring problems is given. The cement grout for filling the channels consisted of 2.5 parts of cement mark 500 and 1 part water. The injecting of the grout was carried out by means of a hand-operated suction pump, and when the channel was completely filled a pressure of 2-3 atm was applied. During production of these precast pre-tensioned units various improvements and modifications were found to be necessary. There are 7 figures.

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30(1)

SOV/99-59-10-1/11

AUTHOR: Ben'yaminovich, E.M., Korotkov, P.A., Nikolayev, Ye.M.  
and Rozenblat, V.F., Engineers

TITLE: The South Golodnaya Step' Canal

PERIODICAL: Gidrotekhnika i melioratsiya, 1959, Nr 10, pp 3-16  
(USSR)

ABSTRACT: The Golodnaya step' area of Uzbekistan and Kazakhstan contains 600,000 hectares of land suitable for irrigated cotton-growing. For this reason the area has been the subject of many development and reclamation projects, attracting the attention even of the Soviet hydraulic engineers G.K. Rizenkampf, F.P. Morgunenko and V.F. Bulayevskiy. Several plans for the irrigation of the area have been drawn up; however, the final variant, approved by the CC of the CPSU and the Sovet ministrov SSSR (Council of Ministers of the USSR) on 14 June 1958, provided for irrigation of the Golodnaya step' by two canals - the existing North Canal

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The South Golodnaya Step' Canal

SOV/99-59-10-1/11

imeni Kirov and the South Golodnaya Step' Canal, still under construction. The water for these canals was to be drawn from the Farkhad Dam via the derivation canal of the Farkhadskaya GES (Farkhad Hydroelectric Plant) with a throughput of 500 cu m/sec. The general layout of the system may be seen from Fig 1. The area covered by the North Canal contains about 250,000 hectares suitable for irrigation, of which some 180,000 hectares have now been reclaimed, while the South Golodnaya Step' Canal dominates an area containing 350,000 hectares of land suitable for irrigation. Of this about 40,000 hectares have so far been reclaimed. It is proposed to set up 31 cotton-growing sovkhoses and several horticultural sovkhoses in the new irrigation areas. About 50-55% of the total irrigated area will be under cotton and each new sovkhos will cover around 8-10 thousand hectares. Watering will mainly be effected by pipelines in long furrows. Sprinkling will be used on farms in the South-West part of the Golodnaya step' where the ground is uneven and the soils have a comparatively high degree of permeability. All

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KOROTKOV, P.A.; Prínimal uchastiye DOLGOPOLYY, V.A., diplomant

Investigating noncontact thermal microflowmeters for liquids  
and gases under laminary flow conditions. Izv.vys.ucheb.zav.;  
prib. 6 no.6:130-136 '63. (MIRA 17:3)

1. Leningradskiy tekhnologicheskij institut imeni Lensoвета.  
Rekomendovana kafedroy avtomatizatsii khimicheskikh proizvodstv.



KOROTKOV, P.A.; LITVINOVA, Ye.I.; Primalni uchastiye: ZVIAGIN, M.I.;  
ANDREYEV, N.F.; UDAVKOV, G.G.

Automatic recording of transformations in enameled cast iron during  
heating and cooling. Izv. vys. ucheb. zav.; Chern. met. 6 no.11:  
194-199 '63. (MIRA 17:3)

1. Leningradskiy tekhnologicheskiy institut im. Lensoвета.

KOROTKOV, P.A.; OTSUP, R.R.

Investigating the thyatron speed regulator of a d.c. electric  
motor. Trudy LTI no.59:113-121 '61. (MIRA 17:9)

0-68-69 EWP(m)/EPP(c)/EPP(n)-2/EPR/ENG(v)/ENH(m)/ENF(k)/ENT(1)/EOS(x)/  
P-a/PWA(m)-2/EWA(d)/EWA(1) Pd-1/Pe-5/Fi-4/Fr-7/Ps-9/Pu-7/Pz-6/Peb IJP(c)  
GG/WN

ACCESSION NR: AP5000981

S/0272/64/000/009/0076/0073

AUTHOR: Beiyayov, D.V., Korotkov, I.A.

TITLE: A flowmeter for measuring small flows of gas at high pressure

SOURCE: Ref. zh. Metrologiya i izmeritel'naya tekhnika. Otd. vyp., Abs. 9.32.486

TOPIC TAGS: proximity flowmeter, heat sensitive flowmeter<sup>5</sup>, high pressure flow,  
differential superthermocouple, flowmeter calibration curve, gas flowmeter<sup>10</sup>

**ABSTRACT:** The article describes the sensor of a heat-sensitive proximity flowmeter designed to regulate the flow rate of ethylene at practically any pressure. Its operation is based on variations in the temperature field of a heated tube as the gas flows through it. Since the intensity of heating remains constant, the rate of flow is determined from the temperature differentials of points at which the heat sensitive elements are placed. The latter are in the form of chromel-copel differential superthermocouples with groups of cold and hot junctions spaced at 150 and 35 mm, respectively, from the heater's center. A schematic electronic potentiometer EPD, with a scale ranging from 24 to 48 mv, is used as the secondary converter. Flowmeter calibration curves obtained at pressures of 400, 600 and 800 atm. by measuring the flow rate of ethylene with gas counters of type GK-6 and GSB-400 are given. Errors in the measurement of gas flow rate, i.e.

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L 22562-65

ACCESSION NR: AP5000981

maximal deviations from the averaged calibration curve, equalled  $\pm 50\%$ . Three illustrations. E. Vtyurina

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE

NO REF SOV: 000

OTHER:000

Card 2/2

KOROTKOV, P.A.

Veterinary work in Krasny Khelm District, Kalinin Province.

Veterinariia 32 no.8:26-30 Ag '55. (MIRA 8:10)

(KRASNY KHOLM DISTRICT--VETERINARY MEDICINE)

KOROTKOV, P.

Leading poultry farm. Veterinaria 33 no.7:39-43 J1 '56.(MIRA 9:9)  
(Rossosh' District--Poultry)

KOROTKOV, P.A.

Progressive veterinary hospital. Veterinariia 33 no.11:12-16  
N '56. (MLRA 9:11)  
(Alekseyevka District--Veterinary hospitals)

KOROTKOV, P.A.

Veterinary service in Pavlovsk District, Voronezh Province.

Veterinariia 34 no.1:25-28 Ja '57.

(MLRA 10:2)

(Pavlovsk District--Veterinary medicine)



KOROTKOV, P.A.

Collective farm veterinary station. Veterinaria 34 no.4:28-32  
Ap '57. (MIRA 10:4)

(Veterinary medicine)

KOROTKOV, P. A.

"Information about new instruments."

Veterinariya, Vol. 37, No. 10, 1960, p. 60

KOROTKOV, P.A., starshiy veterinarnyy vrach

Information on new instruments. Veterinariia 37 no.10:60-61  
0 '60. (MIRA 15:4)

1. Trest "Soyuzzoovetsnab".  
(Veterinary instruments and apparatus)

KONDILENKO, I.I.; KOROTKOV, P.A.

Relationship between the absorption coefficient and Raman spectrum  
lines in the resonance region [with summary in English]. Ukr. fiz.  
zhur. 3 no.6:765-772 N-D '58. (MIRA 12:6)

1.Kiyevskiy gosudarstvennyy universitet.  
(Raman effect) (Absorption of light)

KONDILENKO, I.I.; KOROTKOV, P.A.; STRIZHEVSKIY, V.L. [Stryzhevs'kyi, V.L.]

Indicatrix of the Raman scattering. Ukr. fiz. zhur. 5  
no.1:122-124 Ja-F '60. (MIRA 14:6)

1. Kiyevskiy gosudarstvennyy universitet.  
(Raman effect)

25583

S/185/60/005/002/020/022  
D274/D304

24. 2120 (1160, 1163, 1482)

AUTHORS: Kondylenko, I.I., Korotkov, P.A. and Stryzhevs'kyi,  
V.L.

TITLE: On the intensity of lines in Raman scattering

PERIODICAL: Ukrayins'kyi fizychnyy zhurnal, v. 5, no. 2, 1960,  
279-281

TEXT: The article has two objects: 1) To obtain a formula for the frequency dependence of the intensity of lines (in gases), and to transform the obtained formula by means of the adiabatic approximation; 2) To experimentally study the frequency dependence of intensity of scattering and compare the results with theory. The author proceeds from the formula for the differential effective cross section of light quanta scattering, as given by W. Heitler (Ref. 1: Kvantovaya teoriya izlucheniya (Quantum Theory of Radiation), IIL, M., 1956) [Abstracter's note: Translation into Russian]. The formula for intensity obtained differs from that obtained earlier by Plachek. By taking the average with respect to the period of

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D274/D304

On the intensity of lines...

oscillation of light wave, the intensity is given by

$$I = \left( \frac{\omega^4}{2\pi c^3} \right) |P_1|^2, \quad (2)$$

where

$$P = \alpha E_0, \quad \alpha_{xy} = \frac{1}{\hbar} \sum_j \frac{\omega_j \omega_{jm}}{\omega \omega_0} \left[ \frac{(\hat{S}_y)_{ij} (\hat{S}_x)_{jm}}{\omega_j - \omega_0} + \frac{(\hat{S}_x)_{ij} (\hat{S}_y)_{jm}}{\omega_{jm} + \omega_0} \right] \quad (3)$$

where  $2E_0$  is the amplitude of the electric wave vector. Eq. (3) can be transformed by the adiabatic approximation; the matrix elements of the operator  $\hat{S}$  with respect to electron coordinates is expanded in powers of the displacement of nuclei from their equilibrium positions, whereas the frequencies are expanded in powers of ratios between differences of frequency-factors. After some transformations, a simplified formula is obtained for  $\alpha$ . ( $\alpha$  was assumed to be reduced to the principal axes). The obtained formula agrees with the results obtained by M.V. Vol'kenshteyn et al., in 1948 and 1949. An experimental study was made of the intensity of two lines of Raman scattering in liquid benzol. The method of measurement is described

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S/185/60/005/002/020/022  
D274/D304

On the intensity of lines...

in references: I.I. Kondylenko and P.A. Korotkov (Ref. 6: UFZh, 3, 765, 1958). The results of the study are given in a table, which also contains (for comparison) theoretical data. There is good agreement between both. (A comparison with Plachek's formula shows discrepancies). A table is given which shows that intensity  $I$  vs. frequency  $\omega$  might sometimes approximately be given by  $I = \text{const } \omega^4$ . Such a relationship apparently applies to the Raman spectrum of  $\text{CCl}_4$ , investigated by I.I. Kondylenko (Ref. 5: Naukovi zapysky Kyyvs'kogo derzh. un-tu, Zb. fiz. fak-tu, no. 10, v. 18, no. 3, 1959). There are 2 tables and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Kyyvs'kyi derzhavnyi universytet (Kiyev State University)

SUBMITTED: October 16, 1959

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S/051/60/038/04/007/032  
E201/E691

AUTHORS: Kondilenko, I.I. Korotkov, P.A. and Strizhevskiy, V.L.

TITLE: The Raman Scattering Indicatrix

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 4, pp 471-476 (USSR)

ABSTRACT: The authors give a simple and clear derivation of Plachek's formulae (Ref 2) which give the dependence of the intensity of Raman lines  $I$  on the angle of observation  $\psi$  and the degree of depolarization  $\rho$ . The authors measured the angular dependence of the Raman line intensities of carbon tetrachloride, benzene and chloroform. A cell, K, with the appropriate liquid was illuminated with two vertical mercury lamps PRK-4 (they are shown as  $L_1$  and  $L_2$  in Fig 2). Between the lamps and the cell diaphragms  $\Delta$  were placed; each of these diaphragms consisted of a set of metallic plates lying parallel to the direction of the light beam from a lamp to the cell. The scattered light was recorded by means of a photoelectric spectrometer DFS-4. The lamps, the diaphragms and the cell were fixed to the same base which could be rotated about a vertical axis. The lamp-diaphragm-cell system was rotated and the angle of rotation measured by means of a special goniometer. Simple graphical calculations showed that in such

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S/051/60/008/04/007/032  
E201/E691

The Raman Scattering Indicatrix

rotation the volume of the liquid which takes part in scattering remains practically constant. Consequently the change in the intensity of scattered light can only be due to the angular dependence suggested by Plachek. The results obtained are listed in a table on p 474 and the effect of variation of the observation angle  $\varphi$  on the Raman spectrum of  $\text{CCl}_4$  is shown in Fig 3. The results obtained agreed satisfactorily with Plachek's theory. There are 3 figures, 1 table and 6 references, 4 of which are Soviet, 1 English and 1 German.

SUBMITTED: June 29, 1959

Card 2/2

KONDILENKO, I.I.; KOROTKOV, P.A.; STRIZHEVSKIY, V.L.

Intensities of the lines of Raman spectra. Opt.1 spektr.  
9 no.1:26-33 J1 '60. (MIRA 13:7)  
(Raman effect)

KONDILENKO, I.I.; KOROTKOV, P.A.; STRIZHEVSKIY, V.I.

Studying the indicatrix of the Raman effect. Opt. i spektr.  
ll no.2:169-174 Ag '61. (MIRA 14:8)  
(Raman effect)

L 18580-63

EWI(1)/BDS AFFTC/ASD/SSD

ACCESSION NR: AP3001277

S/0181/63/005/006/1595/1600 56

AUTHORS: Kondilenko, I.I.; Verlan, E.M.; Korotkov, P.A.; Strizhevskiy, V.L. 55

TITLE: Indicatrix of the combination scattering of light in a crystalline medium

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1595-1600

TOPIC TAGS: combination scattering, indicatrix, Si, O, optic axis, crystalline material

ABSTRACT: The authors have studied the conditions of dependence (of the indicatrix) of combination scattering of light in crystalline material both in theory and in experimental work. The theoretical expressions are derived from previous works (V. L. Strizhevskiy, FTT, 3, 2929, 1961, and FTT, 4, 1492, 1962). The experimental work is basically similar to previous work on liquids (I. I. Kondilenko, P.A. Korotkov, and V.L. Strizhevskiy, Opt. i. spektr., 11, 169, 1961). The authors obtained general formulas determining the indicatrix in any arbitrary crystal. Vibrations of  $466 \text{ cm}^{-1}$  in quartz were first used in experimental investigation of the indicatrix in a crystal in the angular interval of  $40-140^\circ$ . The experimental data agree with theory. The authors show that a study of the indicatrix of combination scattering may serve as a method of investigating oriented

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ACCESSION NR: AP3001277

systems. To illustrate the method (with a few simplifying assumptions) they determined the angle formed by the Si-O bond with the optic axis. This value proved to be  $55^{\circ}$ , which corresponds satisfactorily with the actual value of  $54^{\circ}44'$ . There are disadvantages to the system, however, limiting its usefulness. Chief of these is the presence of parameters in the formulas that are unknowns-- components of the tensor of combination scattering. Furthermore, the spectrum of combination scattering is not always capable of experimental observation. Orig. art. has: 1 figure, 1 table, and 13 formulas.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko (Kiev State University)

SUBMITTED: 11Jan63

DATE ACQ: 01Jul63

! CL: 00

SUB CODE: PH

NO REF SOV: 009

OTHER: 001

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EWI(1) EWT(m)/EPF c)/EWP(j)/EBC(L)      Pc-4/Pr-4      GG/RM  
AP4-44860      1      10451/452

1951 Kondilenko, I. I. Korotkov, P. A.

Raman scattering indicatrix and depolarization of Raman

Optika i spektroskopiya, v. 17, no. 3, 1964, 451-452

RAS: Raman scattering, scattering indicatrix, polarization,  
 tetrachloride, benzene

**ABSTRACT:** The degree of depolarization is determined as a function of the angle of observation by using an expression previously derived by the authors (with V. L. Strizhevskiy, Opt. i spektr., 8, 1963, No. 5) for the deviation of the scattering indicatrix of Raman light from the original formula of A. B. P. Chyark. Z. n. opt. i opt. fiz. by using an expression for the deviation of the scattering indicatrix of Raman light from the original formula of A. B. P. Chyark. Z. n. opt. i opt. fiz. Strizhevskiy, A. B. P. Chyark. Z. n. opt. i opt. fiz.

ENT(1)/ENT(2)/SPF(c)/ESP(j)/EEG(t) Po-Pr-4 IJP(c)  
 ON NR: AP4044861 33/RM 1964 17/003/0457/0459

AUTHORS: Kondilenko, I. I.; Korotkov, P. A. B

TITLE: Absolute energy yield of Raman light scattering 21

SOURCE: Optika i spektroskopiya, v. 17, no. 3, 1964, 457-459

TOPIC TAGS: Raman scattering, energy yield, carbon tetrachloride, benzene, chloroform, toluol, line intensity

ABSTRACT: The absolute energy yield is defined as the ratio of the light power of the Raman line to the power of the exciting light referred to a definite number of molecules. The authors have determined experimentally the light yield of the Raman lines 459  $\text{cm}^{-1}$  of carbon tetrachloride, 992  $\text{cm}^{-1}$  of benzene, 667  $\text{cm}^{-1}$  of chloroform, and 1004 + 1030  $\text{cm}^{-1}$  line of toluol using apparatus described in detail in an earlier paper (with V. L. Strizhevskiy, Opt. i spektr. v. 9, 169, 1961). The absolute energy yield per mole-

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L 12624-65

ACCESSION NR: AP4044861

... was found to be 7.9, 4.8, 19.0, and 9.6 (times  $10^{-29}$ ) for  $\text{C}_6\text{H}_6$ ,  $\text{C}_6\text{H}_5$ , and  $\text{C}_6\text{H}_5\text{CH}_3$ , respectively, as compared with a ... (in the same units) of 8.05, 4.95, 19.80, and 10.0, ... Calculation of the relative ... showed satisfactory agreement with the published ... has: 1 figure and 2 tables.

ASSOCIATION: None

EXAMINED: 05Nov63

ENCI: 00

SUB CODE: OP

NR REF SOV: 003

OTHER: 002

Card 2/2

I 47333-66 EWT(1)/EWT(m)/EVP(e) WH  
ACC NR: AR6025775

SOURCE CODE: UR/0058/66/000/CO4/D068/D068

AUTHOR: Kondilenko, I. I.; Porotkov, P. A.; Strizhevskiy, V. L.

TITLE: On the use of Raman spectra for the study of oriented systems

SOURCE: Ref. zh. Fizika, Abs. 4D526

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 574-581

TOPIC TAGS: Raman spectrum, optic crystal, light polarization, quartz crystal

ABSTRACT: A theoretical study was made of the indicatrix and of the polarization effects in Raman spectra in arbitrary anisotropic crystals. General formulas are obtained for the intensity of the scattered light as a function of the scattering angle, polarization, and the macroparameters (dielectric constant) and microparameters of the medium. It is shown that it is possible to determine the orientation of the bonds inside the crystal. An experimental study was made of the indicatrix in a quartz crystal. Experiment and theory are in satisfactory agreement. [Translation of abstract]

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(MIRA 19:1)

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681.121

AUTHOR: <sup>44,55</sup>Korotkov, P. A.; <sup>44,55</sup>Belyayev, D. V.; <sup>44,55</sup>Rukin, Ya. V. <sup>68</sup>

TITLE: A noncontact thermal flowmeter with a semiconductor heater for up to 10,000 liters per hour <sup>25</sup>

SOURCE: IVUZ. Priborostroyeniye, v. 8, no. 4, 1965, 123-126

TOPIC TAGS: flow meter, <sup>21,44,55</sup>fluid flow, thermocouple, semiconductor device

ABSTRACT: The characteristics of a noncontact thermal flowmeter are studied. The instrument operates on the basis of finding the deformation of a temperature field generated by a heater on the outer surface of the pipe through which the liquid is flowing. This deformation is a single-valued function of the rate of flow when the parameters of the liquid and those of the ambient medium are stable. The heater is a semiconducting layer of stannous chloride applied over titanium enamel. Electric current is fed to the heater from a voltage regulator through copper contact rings fastened to the pipe with a distance of 50 mm between them. The sensing element for measuring the temperature difference is a chromel-coppel thermocouple fastened to the outside surface of the pipe. The sensitivity of the instrument is improved by using a differential hyperthermocouple consisting of two sets of these chromel-  
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coppel pairs with ten thermocouples in each group. The junctions of one group are located 145 mm from the center of the heater, while those of the other group are placed 35 mm downstream from the center of the heater. Differential connection of the hyperthermocouple eliminates the necessity for thermostatic control of the cold junctions. A diagram of the flowmeter is shown in fig. 1 of the Enclosure. Experimental tests were made on measuring the flow of water through a pipe 63 mm in diameter. Rates of flow were varied from 250 to 10,000 liters per hour. Calibration curves are given for various semiconductor heater powers. It was found that there is a nonlinear relationship between temperature drop and flow rate. The greatest sensitivity is in the region below 3000 l/hr, while the least sensitive region is above 5000 l/hr. Sensitivity increases with heater power throughout the entire measurement range. It is recommended that the lower limit of measurements for a given meter should be set at 20% of the maximum rate of flow. This gives a more uniform scale. A heater power of about 45 watts should be used for the widest measurement range. Circuit alterations are suggested for compensation of measurement errors due to temperature changes in the input flow. The instrument was tested for two months on an average of six hours a day. Measurement errors are less than ±3% of the maximum scale value. Orig. art. has: 2 figures.

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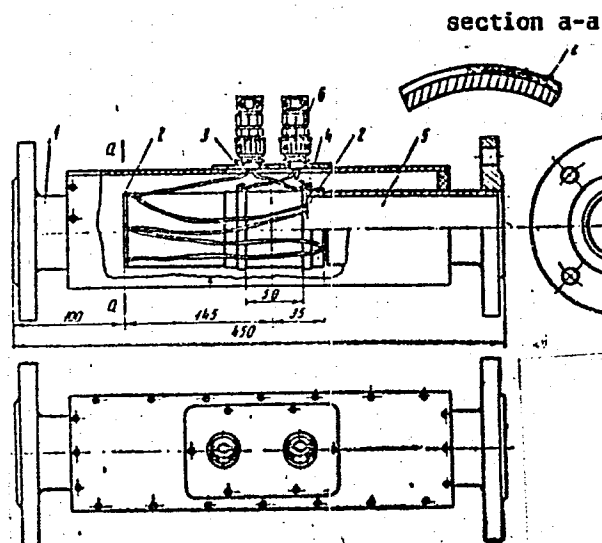


Fig. 1. Diagram of the flow-meter: 1--gauge pipe; 2--thermocouple junctions; 3--semiconductor heater; 4--contact rings; 5--vinyl jacket; 6--hermetically sealed connector

BVK  
Card 3/3

KOROTKOV, P F

24-58-3-31/38

AUTHOR: Korotkov, P. F. (Moscow)

TITLE: Shock Waves at a Considerable Distance from the Point of Explosion  
(Ob udarnykh volnakh na znachitel'nom rasstoyanii ot mesta  
vzryva)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh  
Nauk, 1958, Nr 3, pp 165-168 (USSR)

ABSTRACT: Shock waves at some distance from the point of origin have been investigated in detail by Landau (Ref.1), Sedov (Ref.2), Khristianovich (Ref.3) and others. Calculations with electronic computers on the problem of explosions in a uniform atmosphere, taking counter pressure into account, show that there is a very slow deformation of the wave impulse. This work compares the deformation of the wave profile at some distance from the point of explosion, obtained by the electronic computers, with that obtained by Khristianovich's approximate solution. Equations are obtained for impulse, wave length and pressures in the shock wave; for the linear profile, the work agrees with that of Landau (Ref.1). 1. Away from the source, the wave length is small compared with the distance from the explosion; on this assumption, Khristianovich has obtained a solution for the uniform spherical case

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Shock Waves at a Considerable Distance from the Point of Explosion  
in the form:

$$\xi = \sqrt{\kappa \tau} + 2Kp\tau \lg \frac{\tau}{\tau_0} + \Delta \xi_0 \left( \eta \frac{p}{p_*} \right) \quad (1.1)$$

$$\xi = \frac{r}{p_a} \frac{-1/3}{E^{1/3}}, \quad \tau = \frac{t}{p_a} \frac{-5/6}{\rho_a^{1/2} E^{1/3}}, \quad \eta = \frac{p_* \tau}{p_{*0} \tau_0}$$

$$p = \frac{\Delta p}{p_a}, \quad p_* = \frac{\Delta p_*}{p_a}, \quad \kappa = \frac{C_D}{C_V}, \quad K = \frac{\kappa + 1}{4\sqrt{\kappa} \lg e},$$

$E = 1.175 E_0$  where  $r$  = distance from centre of explosion,  
 $t$  = time from moment of explosion,  $\Delta p$  = excess pressure in  
shock wave,  $\Delta p_*$  = excess pressure in front of shock wave,  
 $p_a, \rho_a$  = pressure and density of surrounding medium,  $E_0$  =  
energy of explosion,  $p_0 p_{*0}$  = dimensionless pressures at  
time  $\tau_0$  corresponding to shock wave and in front of it,  
 $\Delta \xi_0$  = profile of wave at time  $\tau_0$ .

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24-58-3-31/38

# Shock Waves at a Considerable Distance from the Point of Explosion

Assuming  $p \ll 1$ ,  $\frac{\Delta \xi}{\xi} \ll 1$  (1.2)

(Actually,  $p_* = 0.020$ ,  $\Delta \xi / \xi = 0.047$ ). Change of pressure in front of shock wave is given by

$$K p_* r_0 \lg \frac{\tau}{\tau_0} = \frac{1}{\eta^2} \int_{\eta}^1 \zeta \frac{d \Delta \xi_0(\zeta)}{d \zeta} d \zeta \quad (1.3)$$

For impulse pressure in positive phase of wave

$$J = \frac{p_* r_0}{\sqrt{\eta} \tau} \int_0^1 \zeta \frac{d \Delta \xi_0(\zeta)}{d \zeta} d \zeta \quad \left( J = \int_0^{\tau_+} p d \tau \right) \quad (1.4)$$

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# Shock Waves at a Considerable Distance from the Point of Explosion

where  $\Delta\tau_+$  = time of action of positive phase.

2. If the wave profile  $\Delta\xi_0(p_0/p_{*0})$  for some  $\tau_0$  and  $p_{*0}$  is known, then changes in shock wave can be obtained from (1.1). The figures should show good agreement between profile pressures obtained from (1.1) and from the calculator.

3. The profile pressure may be expressed by

$$\Delta\xi\left(\frac{p}{p_*}\right) = -\alpha\left(\frac{p}{p_*}\right)^2 + \beta\left(\frac{p}{p_*}\right) \quad (3.1)$$

and the Table gives values of  $\alpha$  and  $\beta$ . Further, the expression for the pressure in front of the shock wave is:

$$\frac{p_*}{p_{*0}} = \frac{\tau_0}{\tau \sqrt{(1 + A \lg(\tau/\tau_0))(1 + E)}} \quad (3.2)$$

$$A = \frac{D}{C}, \quad D = K\tau_0 p_{*0}, \quad C = \frac{\beta}{2} - \frac{2}{3}\alpha, \quad E = \frac{2\alpha}{3C} \frac{1 - \eta}{1 + A \lg(\tau/\tau_0)}$$

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# Shock Waves at a Considerable Distance from the Point of Explosion

The approximation  $E = 0$  introduces little error, and from (1.4) and (3.2) we obtain:

$$p_* = \frac{p_{*0} \xi_0}{\xi V \sqrt{1 + A \lg(\xi/\xi_0)}}, \quad J = \frac{c}{\sqrt{\pi}} \frac{p_{*0} \xi_0}{\xi} \quad (3.3)$$

The length of the positive phase of the wave is given by

$$\Delta \xi_+ = 2cV \sqrt{(1 + A \lg \tau/\tau_0)(1 + E)(1 + \delta)} \quad (3.4)$$

$$\text{where } \delta = \frac{\alpha}{6C} \frac{\eta}{[1 + A \lg(\tau/\tau_0)](1 + E)}$$

$$\delta \text{ may be neglected, to give } \Delta \xi_+ = (\beta - \alpha) V \sqrt{1 + A \lg(\xi/\xi_0)} \quad (3.5)$$

4In this work the dimensionless quantities of Ref.4 have been used. Others may be used, with particular reference to the

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24-58-3-31/38

# Shock Waves at a Considerable Distance from the Point of Explosion

energy of the explosion, such as  $\bar{r} = r/q^{1/3}$  where  $r$  = distance from explosion, metres,  $q$  = energy in shock waves. Comparison of Okhotsimskiy et al (Ref.4) with experimental data of Sadovskiy (Ref.5) gives  $q = 0.71E_0$  (for atmospheric pressure  $p_a = 10^3 \text{ kg/m}^2$   $\bar{r} = 4.085$  ). (4.2)

Putting in numerical values

$$\Delta p = \frac{0.97}{\bar{r} \sqrt{lg 0.5r}} , \quad l = 1.64 \sqrt[3]{q} \sqrt{lg 0.5r} , \quad I = \frac{22 \sqrt[3]{q}}{\bar{r}}$$

where  $r$  = distance from explosion,  $\Delta p$  = pressure in front of shock wave,  $l$  = length of positive phase,  $J$  = impulse pressure. These equations may be used at some distance from the explosion, where the pressure in front of the shock wave is  $0.1 \text{ kg/cm}^2$  or less. For explosions at ground level the value of  $q$  should be doubled.

5. From Eq.(1.1) and Eq.(3.2) the pressure in front of the shock wave may be found for negative over pressure. In this condition two shock fronts occur, with consequent  $N$  waves.

Calculations by means of the above formulae indicate that

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24-58-3-31/38

Shock Waves at a Considerable Distance from the Point of Explosion  
this phenomenon takes place at a distance from the explosion  
where the pressure at the front of the shock wave equals  
 $40 \times 10^{-6} \text{ kg/cm}^2$ . There are 2 figures, 3 tables and 7  
references, 5 of which are Soviet and 2 English.  
(Complete translation, except for the text of the tables).

SUBMITTED: November 1, 1957.

Card 7/7 1. Shock waves--Mathematical analysis



KOROTKOV, P.F. (Moskva)

Increase of pressure in a blast shock wave in the direction of  
the wind. PMTF no.3:25-35 '61. (MIRA 14:8)  
(Blasting) (Shock waves)

ACCESSION NR: AP4022658

S/0207/64/000/001/0114/0116

AUTHOR: Korotkov, P. F. (Moscow)

TITLE: Mach reflection of shock waves

SOURCE: Zhurnal priklad. mekhan. i tekhn. fiz., no. 1, 1964, 114-116

TOPIC TAGS: Mach reflection, shock wave, automodel problem, Mach wave, triple point, limiting value, interpolation formula, reflection coefficient

ABSTRACT: The author studies the distribution of shock waves for Mach reflection of a shock wave from a plane rigid wall (wedge). This is a self-similar problem since it involves no characteristic constant length. In contrast to true reflection, when incident and reflected waves meet at the wall, with Mach reflection they meet at a certain distance from the wall at a so-called triple point. The author shows that the limiting value of the coefficient of reflection for Mach reflection for weak shock waves is larger, and for strong ones is smaller, than the limiting value for true reflection. He derives a formula for computing the reflection coefficient for Mach reflection when the angle of slope of the wall is maximal. Since the extreme values (depending on the angle) of the reflection

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ACCESSION NR: AP4022658

coefficient are known, he is able to construct a simple interpolation formula for any angle in the region of existence of Mach reflection. This interpolation formula agrees well with experimental data for various angles of slope of the wall and for various intensities of the incident shock wave. Orig. art. has: 3 figures and 5 formulas.

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Card 2/2

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AP50023(1)

AUTHOR: Korotkov, P. F. (Moscow)

TITLE: On nonlinear geometrical acoustics. Weak shock waves

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 5, 1964, 30-37

TOPIC TAGS: shock front, shock front curvature, acoustic propagation

ABSTRACT: Two nonlinear effects of weak shock waves are considered: 1) the refraction effect; 2) the effect of supplementary path curvature. Both phenomena are considered in propagation through a nonhomogeneous medium. The derivations of the weak wave effects are developed first for the general case. In final form the nonlinear geometrical acoustics equations are reduced to a system

$$\begin{aligned} n_t + \frac{w_t}{c} \frac{\partial n}{\partial x_t} - (n_t n_k - \delta_{nk}) \frac{\partial w}{\partial x_k} = \\ = (n_t n_k - \delta_{nk}) \frac{\partial}{\partial x_k} \left( \frac{w}{c} \frac{\partial n}{\partial x_t} \right) \end{aligned}$$

$$2 \frac{w}{c} \frac{\partial n}{\partial x_t} + m \frac{\partial}{\partial x_k} \left( \frac{w}{c} \frac{\partial n}{\partial x_t} \right)$$

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